

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Previously presented) A non-naturally occurring enterokinase-cleavable fusion protein comprising a polypeptide comprising the formula:

(1) Z_1 -Xaa₁-Xaa₂-Xaa₃-Xaa₄-Asp-Arg-Xaa₅-Z₂ (SEQ ID NO:1),

wherein

(a) Z₁ is a ligand recognition sequence;

(b) Xaa₁-Xaa₂-Xaa₃-Xaa₄-Asp-Arg is an enterokinase recognition sequence, in which

Xaa₁ is Ala, Asp, Glu, Phe, Gly, Ile, Asn, Ser, or Val;

Xaa₂ is Ala, Asp, Glu, His, Ile, Leu, Met, Gln or Ser;

Xaa₃ is Asp, Glu, Phe, His, Ile, Met, Asn, Pro, Val, or Trp; and

Xaa₄- is Ala, Asp, Glu, or Thr; and

(c) Xaa₅-Z₂ is a protein of interest, in which Xaa₅ can be any amino acid and Z₂ is a polypeptide of at least one amino acid.

2. (Previously presented) The fusion protein of claim 1, wherein

Xaa₁ is Asp,

Xaa₂ is Ile,

Xaa₃ is Asn,

Xaa₄-is Asp, and

Xaa₅-is Met, Thr, Ser, Ala, Asp, Leu, Phe, Asn, Trp, Ile, Gln, Glu, His, Val, Gly or Tyr.

3. (Previously canceled)

4. (Previously presented) The fusion protein of claim 1, wherein the ligand recognition sequence Z_1 is a streptavidin binding domain.

5. (Original) The fusion protein of claim 4, wherein the streptavidin binding domain is selected from the sequences: His-Pro-Gln-Phe (SEQ ID NO:6), Cys-His-Pro-Gln-Phe-Cys (SEQ ID NO:5), Cys-His-Pro-Gln-Phe-Cys-Ser-Trp-Arg (SEQ ID NO:7), Trp-His-Pro-Gln-Phe-Ser-Ser (SEQ ID NO:210), Pro-Cys-His-Pro-Gln-Phe-Pro-Arg-Cys-Tyr (SEQ ID NO:211), and tandemly arranged combinations and repeats thereof.

6. —49. (Previously canceled)

50. (Previously presented) The fusion protein according to claim 1, wherein said ligand recognition sequence Z_1 is selected from the group consisting of: streptavidin, avidin, an antibody, a peptide antigen recognized by the antibody, the Myc-tag, the Flag peptide, the KT3 epitope peptide, an α -tubulin epitope peptide, a polyhistidine tag, a chitin binding domain, maltose binding protein (MBP), and the α T7 gene 10-protein peptide tag.

51. (Previously presented) The fusion protein according to claim 1, wherein incubation of said polypeptide (SEQ ID NO:1) with enterokinase yields the protein of interest Xaa_5-Z_2 .